IN THE CLAIMS

Current Listing of Claims:

1. (Previously Presented) A printed circuit board (PCB) comprising:

a dielectric board member; and

a first signal line supported on said dielectric board member, said first signal line including an elongated electrically conductive member that is enshrouded with a carbon-based cladding having a carbon concentration greater than 60 percent by weight over at least a portion of the elongated conductive member and a thickness used to tune an impedance of said first signal line.

2. (Previously Presented) The PCB of claim 1, further comprising:

a second signal line supported on said dielectric board member, said second signal line including a second elongated conductive member that is enshrouded with a carbon-based cladding over at least a portion of its length, said second signal line being adjacent to said first signal line.

3. (Original) The PCB of claim 2, wherein:

said carbon-based cladding of said second signal line is continuous with said carbon-based cladding of said first signal line.

4. (Original) The PCB of claim 2, wherein:

said carbon-based cladding of said second signal line is discontinuous with said carbon-based cladding of said first signal line.

5. (Previously Presented) The PCB of claim 1, further comprising:

a second dielectric board member disposed above said dielectric board member and said first signal line.

6. (Original) The PCB of claim 1, wherein:

said elongated conductive member is fully covered over top, bottom and side portions thereof with said carbon-based cladding for said at least a portion of its length.

7. (Original) The PCB of claim 1, wherein:

said elongated conductive member is covered by said carbon-based cladding over greater than 90% of an outer surface thereof.

8. (Original) The PCB of claim 1, wherein:

said carbon based cladding has a dielectric constant that is greater than a dielectric constant associated with said dielectric board member.

9-29. (Cancelled)

30. (Previously Presented) A carbon-based cladding structure for a printed circuit board (PCB), the structure comprising:

a carbon-based cover having a carbon concentration higher than 60 percent by weight; and

a rigid dielectric board member having a plurality of conductor elements, at least one of said plurality of conductor elements fully covered over top, bottom, and side portions thereof with said carbon-based cover having a thickness used to tune an impedance of said fully covered conductor elements to reduce cross talk between a set of said plurality of conductor elements.

31. (Previously Presented) The claim of 30, wherein:

at least two of said plurality of conductor elements fully covered top, bottom, and side portions thereof with said carbon-based cover and said carbon-based cover of one of said plurality of conductor elements connects to another carbon-based cover of another of said plurality of conductor elements.

32. (Previously Presented) The claim of 30, wherein:

said carbon-based cover is formed of at least 99% of carbon by weight.

33. (Previously Presented) The claim of 30, wherein:

said carbon-based cover has a dielectric constant that is greater than a dielectric constant associated with said dielectric board member.

34. (Previously Presented) The claim of 31 further comprising:

a second dielectric board member located above said carbon-based cover.

35. (Previously Presented) The claim of 32, wherein:

the conductor elements are signal lines.

36. (Previously Presented) A printed circuit board (PCB) comprising:

a dielectric board member; and

a first signal line atop said dielectric board member, said signal line enshrouded by a carbon-based cladding having a carbon concentration greater than 60% by weight and a thickness used to adjust an impedance of said first signal line.

37. (Previously Presented) The PCB of claim 36, wherein:

said carbon concentration is approximately 99% by weight.

38. (Previously Presented) The PCB of claim 36 further comprising:

a second signal line atop said dielectric board member surrounded by a carbon-based cladding having a carbon concentration approximately equal to or greater than 60% by weight.

39. (Previously Presented) The PCB of claim 38, wherein:

said carbon-based cladding of said first signal line is contiguous with said second signal line.

40. (Previously Presented) The PCB of claim 38 further comprising:

a second dielectric board member located over said first and second signal line.

41. (Previously Presented) The PCB of claim 36, wherein:

said carbon-based cladding surrounds approximately 90% of the first signal line.